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Health Care in Rural India in the Context of Decentralization:
Perception, Participation, Access and Burden

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Abstract

The present study employing the 2006 Rural and Demographic Survey data, describes people's perceptions of the existence of the health problems, the performance of the decentralized institutions, namely the *panchayats* and people's participation in the regime of decentralized governance. The multivariate analyses estimate health care access, work days lost owing to illness and the treatment cost as a proportion of household income. Findings indicate that while there is a significant percentage of population that perceives the existence of the problem of the availability and accessibility of quality health care, there has been some increase in the significance accorded to health issues in the public discourse held in decentralized settings such as *panchayat* and *gram sabha* meetings. There are significant regional differences with the states of the South relative to the other parts, showing a more active role of the *panchayat*. The contrast is particularly notable when compared to the North. However, greater action by the *panchayats* is also associated with greater level of dissatisfaction, pointing towards some form of the paradox of participation. The multivariate estimates portray a positive role of decentralized governance in predicting health care access, loss of work days owing to illness and cost of treatment as a proportion of household income.

Keywords: Decentralization, India, Health,

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Health Care in Rural India in the Context of Decentralization: Perception, Participation, Access and Burden

The literature in the field of development in the past couple of decades has witnessed a surge of research relating to analysis and evaluation of the decentralization experiments initiated in the developing countries across the globe. While the rationale underlying the adoption of the framework of decentralization is to facilitate the trickle down and reverse the process of development from being top-down to bottom-up, the evidence of success is mixed. It is therefore not surprising that the debate regarding the potential and efficacy of the institution of decentralization in alleviating poverty and reducing inequality is pervasive among academics and policy makers alike (Bardhan 2002).

The present study explores the role of decentralized governance in improving the accessibility and availability of health care services in India. The analysis draws upon the Rural Economic and Demographic Survey (REDS henceforth), dataset collected and disseminated by the National Council of Applied Economic Research (NCAER). REDS is the most recent and the only nationally representative data source that contains information on the existence and quality of health care services as well as the working of the decentralized system of governance, people's perception and participation in the system. REDS data therefore provides the most suitable and unique opportunity to advance our understanding of the contribution of decentralization in the health arena, a sector which has been identified as critical for sustained socioeconomic development (Deolalikar 1988; Thomas and Strauss 1997; See Strauss and Thomas 1998 for a review).

The goals of this study are two-fold. First, the analysis attempts to describe the key dimensions of the health care and decentralized governance, namely accessibility and availability of health care access, reliability of the services, people's perception regarding the role and the performance of the decentralized governance and their willingness to participate in the system. Further, there is an attempt to present differences across regions, economic groups, educational and occupational categories. Second, the investigation attempts to estimate the role of people's confidence in and the actions taken by the decentralized institutions in improving health care access and mitigating the burden of illness.

The above assessment aims to advance our understanding of the role of decentralized system of governance in the health sector in the following ways. For the first time, it provides a picture at the national level of the interaction between the demand (as measured by people's perception of the existence of the problems relating to health care services) and supply (as measured by people's satisfaction of the services provided by the decentralized institutions). Further, the examination presents the disaggregation of the above interaction by the major regions, economic classes, educational and occupational categories. An overwhelming body of the extant literature on decentralization in India with very few exceptions (Johnson, Deshingkar and Start 2005; Kumar 2006) tends to focus on one or two region. The present analysis by presenting information at the level of major regions expects to fill that gap in our knowledge. Finally, the descriptions on the people's willingness to participate and the actual participation provides insights on the success and the sustainability of this relatively new political system, given that participation at the grass-roots level constitutes the foundation of the system of

decentralization. Studies indicate that the process of participation in public discourse in cultural settings such as those of rural India go beyond the explanations based on the economic motive (for participation) and is therefore quite complex (Crook and Manor 1998; Kulkarni 2012; Rao and Sanyal 2009). It may be noted that the present exploration complements the study conducted by Binswanger-Mkhize, Nagarajan and Pradhan (2012) that investigates health care outcomes and incomes in relation with the choice of the provider (private versus public) employing the REDS data.

The Indian Context

India presents a unique case in more than one ways. In the recent years, the international image of India has been significantly enhanced and rightly so, because of its sustained high economic growth rates, high quality technical work force, and willingness to meet the requirements for participation in the global economy. Additionally, India is one of the few countries in the developing world that has consistently implemented developmental and welfare programs within the regime of a stable democracy. However, India's record in the health arena has not been impressive. The proportion of Gross Domestic Product (GDP) spent on health at 4.6 percent (in 2001-02) is lower than what is recommended by the World Health Organisation. On important health indicators, despite the steady improvements, India's performance is not exemplary especially when compared to its contemporary competitor in the world economy, China or to its not so rich neighbors like Sri Lanka. India's infant mortality rate at 56 per 1000 live births in 2005 is higher than that of China (23) or Sri Lanka (4). In similar vein, India with an average life expectancy of 64 years performs worse than China (72) or Sri Lanka (81).

Hence, the correlation between high levels of economic growth and policy reforms at the macro level with improved service delivery at the micro (individual/household) level is not that straightforward in case of India. Empirical evidence shows significant gaps in the quality of service delivery at the rural household level continue to exist. The results from a recent study demonstrate that the rural regions of India suffer from a poverty nutrition trap (Jha, Gaiha, and Sharma 2009). These findings, in other words, suggest the pervasiveness of the vicious cycle of deprivation between low productivity and poor health/nutrition as postulated by the Leibenstein's (1957) efficiency wage hypothesis.

The major reasons put forward to explain the disappointing health outcomes include a) lack of public health initiative, the most important component being the provision of potable water and sanitation (see Das Gupta 2005 for a comprehensive review) and b) poor delivery of services stemming from lack of accountability, corruption and inefficiency owing to infrastructural bottlenecks (Chaudhury et.al 2006). Given that India's public health delivery system has a considerable presence especially in the arenas of preventive health care, the latter factors pose a problem. The problem of poor delivery and therefore access is more severe at sub-national levels since more distant is the unit from the decision making location, more limited it is in its administrative and fiscal capacity (Singh 2008). Government of India with the goal to tackle this shortcoming has undertaken a significant initiative of decentralized governance with much vigor in the past decade and a half. This initiative of decentralization or as in India it is called the *Panchayati Raj* system was after decades of debate legally formalized in 1993 as a result of two constitutional amendments (see Gupta and Gumber, 1999 for a chronological

review of the history of decentralization endeavor in India). The amendments entailed devolution of powers and responsibilities to the local government to carry out fiscal and legislative responsibilities in the sectors of law and order, health, agriculture and irrigation. More specifically, it implied a more formal system of state-local transfer of funds. Given that India has been more of a centralized than a decentralized federation, the initiative is a significant development. The basic idea is to reform the developmental approach from top-down to bottom-up. As a result of the above reform the central government has created or rather revived² the local government units called the *panchayats*.

The *panchayats* are in particular intended to provide safety to the vulnerable population groups such as those who do not own private land or are part of the formal employment market that provides some form of security. The percentage of such population groups is substantial with 86 percent of women and 83 percent of men in the non –agricultural labor force are engaged in informal activity (ILO 2002). Within the agricultural labor force too, employment in informal sector is significantly high. Informal sector is completely unregulated and a considerable proportion of it entails payment on daily basis, missing even a day due to illness means loss of wages. In other words, it is not necessary to suffer from major illness episodes to get penalized economically for the workers in the informal sector. With nearly 70 percent of the Indian population residing in the rural areas, the rural informal sector is sizable. Also, the health care

² The concept of *panchayat* dates back to pre-Independence (1947) era. Local village level self-governance was seen as a solution for socioeconomic development. It however not only did not receive much supported from the British rulers, but was also a subject of neglect for nearly 45 years after Independence. Also, as mentioned previously, Gupta and Gumber (1999) provides a comprehensive review.

delivery system in the rural areas is of much poor quality relative to what is available in urban parts. It may be noted that to enhance the quality of services, the Government of India introduced the National Rural Health Mission (NHRM) in 2005, a program that will work in collaboration with the *panchayats* to address and improve the access and quality of health services.

There is understandably a notable body of literature analyzing the decentralization on accountability of public funds (Issac and Frank 2000; Sethi 2004), the framework and the impact provision of public goods (Acharya 2002; Ahmad et.al 2005; Banerjee and Somnathan 2004; Bardhan 2002; Besley et.al 2004; Deither 1999; Foster and Rosenzweig 2001) and quality of governance (Ahmed 2006; Bardhan and Mookherjee 2006). While the literature recognizes the potential of the *Panchayati Raj* system in improving the quality and quantity of delivery of public goods such as health services, there is evidence of substantial gaps in the realization of that potential. The reasons put forward are lack of expected fiscal and legislative autonomy to the local governments, corruption, persistent inequality in the distribution of benefits, mismatch in the expectation of the people with the activities of the local government. The present study sheds light on the role of *panchayats* in the health arena by drawing upon nationally representative updated evidence.

Data and Methods

The data set that we employ for the study is 2006 REDS³ collected by the NCAER. REDS data is a nationally representative sample of 8,659 rural households located in 241 villages and 17 states of India and covering over 40,000 households (NCAER 2006). The survey design constituted a multi-stage stratified sample. Apart from the details on social (caste, religion), demographic (age, sex, educational attainment, geographical location), and economic (employment, type of occupation, number of days worked), it contains information on health such as whether sought health care in case of illness, number of days lost due to illness. With respect to decentralized governance, REDS data set has information on individual level perceptions of the local government's accountability, role responsibility, past performance and sense of trust. The survey instrument includes a village questionnaire with information on the availability of educational and health care facilities, other public infrastructure, functioning of the local government, at the level of the village. REDS is the only data set that contains detailed information about the functioning of the *panchayats* at a nationally representative level. The REDS data has information on the people's perception and their participation in the process of governance along with the performance of the *panchayats*. Additionally, there is data collected at the village level on the number of *panchayat* meeting, the significance of the issues and the power of governance. All the above make REDS an unusually rich and suitable data set for the present analyses.

³ There is a panel component to the REDS data with 5,885 households interviewed in 1999 being revisited in the 2006 round. For the purposes of the present analysis, we employ the data for the 2006 round.

We conduct the analyses at the individual level. We choose three dependent variables; health care access, number of days of work lost due to illness and treatment costs as a proportion of household income. The first one reflects health seeking behavior and has been asked of everyone as to whether they accessed any kind of health care service in the year previous to when the survey was conducted. The second and third dependent variables can be considered as measures of burden of illnesses. The information on the two variables has been asked of people who fell ill in the one year (2005-06) prior to the survey. In case of the ‘number of days of work lost’, the information has been asked only of working age people who lost at least one day of work due to illness. In order to correct for the skewness, we use a logarithmic transformation in case of the variable, ‘number of work days lost’. The study sample for the variable, treatment cost includes only those who incurred cost greater than zero for the treatment of the illness⁴. We use treatment cost as a proportion of household income as the variable instead of directly using the treatment cost provided in the data. We do so because there is a positive correlation between treatment cost and the household income. Further, to avoid a potential bias, we employ treatment cost as a proportion of household income as a variable. We estimate the following equation for the three dependent variables;

$$Y_i = \beta X_i + \delta Z_i + \gamma W_i + e_i$$

where X_i = vector of individual level characteristics

Z_i = vector of household level characteristics

⁴ The sample size of the three dependent variables therefore varies. Moreover, the questions on the perception and participation were canvassed to only randomly selected proportion of the total sample.

W_i = vector of community level characteristics including health infrastructure and the role of *panchayat*

It may be noted that Y_i in case of the first dependent variable, access to health care is operationalized as;

0 = did not access health care service in the year 2005-06

1 = accessed health care service in the year 2005-06

The choice of the independent variables is based on the previous literature. The individual level characteristics include years of schooling, marital status, and occupation. We use years of schooling in its continuous form and therefore square it. Marital status is a categorical variable with 'currently married' being the reference category. In case of occupation, we use three categories – 'self-employed in agricultural and non-agricultural activities'; 'agricultural and non-agricultural wage laborers'; and 'others' which includes salaried people. We use only the primary activity combined with the information on whether the respondents worked as self-employed, agricultural or non-agricultural wage laborers. We do not include the secondary activity as the number of people reporting a secondary activity is considerably lower. 'Agricultural and non-agricultural wage laborers' comprise the reference category.

The household level indicators are caste/religious affiliation of the household, household income and occupation of the head of the household. We use occupation of the head of the household as a measure of household's economic status in case of the analyses with the dependent variable, 'treatment cost as a proportion of household income'. We do this to circumvent the potential endogeneity with the dependent variable. Recent research on India indicates a strong correlation between household's socioeconomic status and the characteristics of household head (Kijima 2006). The community level characteristics include the regions and

the distance of the nearest health center along with the variables related to the *panchayat*. We use the standard classification for the regions with some modification. Following past research (Jha, Gaiha and Sharma 2009), we create a separate category for the four north Indian states of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh and use the popular acronym, BIMARU, to identify them. We also classify the two new states of Chattisgarh and Jharkand as a separate category. Our aim is doing that is to BIMARU is the reference category. It may be noted that we include a logarithmic transformation of the distance to nearest health center variable in the regression equation.

The *panchayat* level variables employed in the regression are of three kinds. First, we consider the variable whether the *panchayat* was approached to by the people when they were faced with the problem concerning the provision of health care services. This variable helps reflect whether people think of *panchayat* as a viable choice that can help resolve health relates issues. The second variable, whether people have the confidence in seeking help from the *panchayat* for a positive intervention in dealing with problems pertaining to health issues, measures the level of trust that residents have in the *panchayat*. The third variable, whether action was taken to resolve matters relating to health care provision, is an indicator of the perception of the performance of the *panchayat*.

Appendix Table 1 provides the description of the dependent and the independent variables.

Results

*Access, Quality and Costs*⁵

Table 1 presents the distributions of three dependent variables, health seeking behavior and of the quality of services disaggregated by states. The access of health care services is statistically significantly low in the 'West' relative to the other regions. As the question on health care access has been asked for everyone and of only people who fell ill, the low percentage of people accessing health care in case of the West suggests the Western states having a healthy population. This is corroborated by the distribution on the other dependent variables, the number of days lost and proportion of household income spent on health care. Also, given that people in the West enjoy high educational levels relative to the other parts, their lower rate of access is more a reflection of not needing to access health care rather than the neglect of health. The number of work days lost due to illness is statistically significant higher in the North and in the East as compared to the national average. It may be noted that the standard deviation for the variable is considerable suggesting that the distribution is skewed. In case of the treatment cost as a proportion of household and per capita income, the states of the North and BIMARU states bear more burden than the other states. With respect to health seeking behavior, the percentage of people availing private health care services in case of most serious illness is statistically significantly higher in the states of North and in BIMARU states. In contrast, in the South nearly

⁵ It may be noted that we have conducted the appropriate chi-square and t-tests to examine the statistical significance of the differences that we discuss.

70 percent of patients in instances of most serious illness visit public health care services. Nationally, the percentage is close to 60.

Table 1 about here

The state wise distribution on the quality of services as measured by the availability of doctor and waiting time depicts that the states of North and BIMARU category are much better off nationally as well as relative to South. The reason for that probably lies in the fact that the majority of the patients in these regions avail services at the private facilities which as the literature (Binswanger-Mkhize, Nagarajan and Pradhan 2012) confirms are more efficient than their counterparts in the public sector. The questions on the knowledge relating to health seeking behavior indicates that people in the regions of the East (9.7 percent) and the West (7.1 percent) are most ignorant about where to complain in case of a problem with the health care delivery system. Further, the majority thinks that the place to file a complaint is either with the senior doctor or management in charge of the health care institution. The percentage of people who feel that *panchayat* can be a place where complain can be made is 6.3.

The infrastructure in terms of the availability of the health care facilities, 'New States' are at a greater disadvantage relative to the other regions. The most basic health care facility, sub-centre is nearly 10 kms away. The distance of the nearest hospital is as great as 44 kms and the average distance needed to travel to obtain medicines is 13 kms. This is understandable given that considerable parts of the two states are forested. The residents of the states of the East appear to enjoy the benefit of relatively short distances to all major types of health facilities, sub-centre, subsidiary sub-centre, hospital and medicines.

Perception, Participation and Performance

There is a statistically significant difference in extent to which drinking water and sanitation and sewage are perceived relative to health care system as problems existing in the neighborhood with the exception of the region, East and West se seen in Table 2. There is over 80 percent of the people who think that availability of drinking water and sanitation and sewage as problem. In contrast, the percentage of people who think of health as a problem ranges between 59 and 83. In the regions of the East and of the West, the percentage that think that water, sanitation and sewage is a problem is within a much narrower range. The gap between the proportion of people who notice access to drinking water and sanitation as problem versus those who think that health care is an issue is similar across the various economic groups, educational groups and occupational categories.

Table 2 about here

With respect to the role of the *panchayat*, in all the regions with the exception of the South, people think that higher level *panchayat* has a greater responsibility in resolving the health problems facing their neighborhood than the gram *panchayat*. In the South, the gap is not statistically significant. Additionally, among the regions, people residing in the North, followed by those living in the New States are least likely to think of *panchayat* as being responsible for improving health care facilities. The percentage of people living in the South accorded significantly greater responsibility to the *panchayats* than the others. More than one-third of the respondents living in the states of the South feel that *panchayat* is responsible for the problems of inefficient health care services. In contrast, the corresponding proportion in the North is less

than one –fifth. However, the percentage of people who have trust in *panchayat* as a source from where they can get help is statistically significantly greater in the North (42.3) than is the South (23.28). The national average indicates that one-third of the rural population has the confidence in seeking support from the *panchayat* in dealing with resolving an issue. Similar to the distribution for the other indicators, the gap across the various economic, education and occupational categories is not noteworthy.

On the question whether any action was taken by the *panchayat*, when approached with the problem regarding the provision of health facilities, the national average of the percentage of people responding in the affirmative is 10.2. There is, once again, a statistically significant difference by states. Figure 1 helps portray a better visual depiction of the regional differences.

Figure 1 about here

While as per only 7 percent of the people living in North, action was taken by the *panchayat*, the corresponding percentage for the South is 36.2. However, the gap in the satisfaction levels between the North and the South does not exist to the same degree. The highest levels (48 percent) of dissatisfaction are in the states of East while the lowest level (18.7 percent) is in the New States.

Table 3 about here

With respect to the specific question of whether approached the *panchayat* to resolve the problem regarding the ineffective functioning of the *panchayat*, the state wide differentials are not to the same extent as they are for any action taken for the provision of health facilities. The percentage of people approaching the *panchayat* to seek redressal for the problem of lack of

proper functioning of health centres ranges from 28.3 percent in the North to 42.6 in the East. The percentage reporting the problem as not being resolved is significantly greater in the North (38.8), BIMARU (41.7) and New States (55.8) relative to East (17), West (9) and the South (8.8). An all India average indicates that a quarter (25.2 percent) of the rural population reports the problem as not being resolved. In case of the problem of pregnant women receiving assistance the state wide pattern remains the same. However, the response rate of the *panchayat* appears to be better than what it was when approached with the issue of 'health centre not functioning properly' barring the BIMARU states and states in the West. In the South, only 5 percent of the people report as the problem not being resolved by the *panchayat* when approached with the issue of the difficulties of pregnant women. It may be noted that with regard to the educational categories, the percentage who approached the *panchayat* with the problem of health centre not functioning is the highest for the primary education holders relative to those with higher secondary and some college education.

On the perception regarding the performance of the current *panchayat* vis-a vis the previous *panchayat* with respect to the provision of health facilities, the modal category is 'about the same' nationally. In terms of state wise distribution, in the South, a statistically significantly higher percentage of people feel that the situation has become 'somewhat better' (44.9) relative to those who report as 'about the same' (30).

Table 4 about here

In a similar vein, the percentage reporting the system of provision of health care facilities having become 'much better' is greater, albeit marginally higher in the South (9.9) than

nationally (6.8) and the rest of the regions except for the West. There is no statistically significant difference between the West and the South. The differences among the various economic, educational and occupational categories are not statistically significant.

Given that the basic idea behind the revitalization of the *Panchayati Raj* system stems from the philosophy of self-governance, analyzing the extent of people's willingness to participate in the system may help a more holistic evaluation of the *panchayats*. Table 5 provides a breakdown on the percentage of allocation of funds that they would like the *panchayat* to make in improving the quality and provision of various public services and other issues of concern. Also, Table 5 portrays people's interest in contributing Rs.100 if they are faced with the hypothetical situation that the program without their contribution would be in jeopardy. The last three columns of Table 5 ranks people's interest in contributing to the various programs.

Table 5 about here

The distribution indicates that provision of drinking water and sanitation are the top most priority. More than 50 percent of the respondents feel that the *panchayats* should allocate more than 20 or more than 50 percent of their funds to improve the drinking water and sanitation facilities. With respect to the provision of health facilities, nearly 47 percent of the rural residents are of the opinion that the *panchayat* should allocate more than 20 percent of its resources on improving health care facilities. The response to the question on the extent of interest in contributing to the various programs is consistent with the patterns on the magnitude of contribution that people would like the *panchayats* to make or whether they would consider contribution Rs.100. Drinking water and sanitation remain a priority with the highest percentage

(52.7 and 31.42 respectively) of people in the ranking of the programs that the people are most interested in contributing. Provision of health facilities ranks four with 29.1 percent expressing that they are ‘most interested’ in contributing to the improvement of health care services.

Table 6 attempts to capture another measure of the role of *panchayats* by providing information on the degree to which people perceive *panchayat* as the most important source of information regarding major illnesses such as pulse polio, HIV and bird flu.

Table 6 about here

The distribution indicates that ‘health worker’ tops the list as the most important source of information followed by local television, national television and vernacular newspaper. The ‘village *pradhan*’ does not appear as an important source of information.

A perusal of the distribution of the number of *panchayat* and *gram sabha* meetings informs that the number of meetings has not changed significantly between the period 1996 and 2006. Also, the states in North and BIMARU do not necessarily have fewer numbers of meetings than the states of South.

Table 7 about here

There is a positive trend with regard to the frequency with which the health issues are discussed across the board in all the regions. Overall with few exceptions, the decade between 1996 and 2006 has witnessed an increase in the number of *gram sabha* meetings in which health as an issue was rarely and frequently discussed relative to ‘never’ being discussed. There are however state level differences in the frequency with which health issues are discussed. Health issues are discussed more frequently in the sates of the South than in the rest of the regions. The

gap between the North and BIMARU states with those in the South is noteworthy. While in the North and BIMARU states, 4 and 13.7 percent of the times, health issues are discussed frequently, the corresponding statistic for the South is 41.9.

Table 8 provides additional information on the significance of health as part of the discourses in the *panchayat* over the course of three *panchayat* periods. The trend shows there is quite a number of change in the importance accorded to health issues (See Figure 2 and Table 8).

Figure 2 about here

The percentage of meetings in which health is an important issue increased from 32.8 in previous to previous *panchayat* to 45.3 in current *panchayat*. However, there is not a commensurate change in the percentage of the elected *panchayats* taking decisions. In fact, the statistic presented in Table 8 shows that there is a marginal decline in the role of elected *panchayats* (from 34.9 percent in previous to previous *panchayat* to 32.8 percent in current *panchayat*).

Table 8 about here

The above trend is accompanied by nearly a six percentage point increase (from 38.8 to 46.1 percent) in the part played by the government official, the highest increase among all the agencies. The increase in the responsibility played by government officials in making decisions regarding health is followed by that played by gram sabha over this course of period between previous to previous *panchayat* (11.6) to current *panchayat* (14.2).

The state wise discrepancies in the ranking accorded to health in the current *panchayat* show that health, largely, occupies an item being ‘important’ and ‘most important’ in all of the

regions. In the category, ‘extremely important’, the West tops the list. There are more than a quarter of people (26.1 percent) who feel that health is an ‘extremely important’ item in the meetings during the current *panchayat* period.

Table 9 about here

However when considering the role of agency in the decision making, it appears that elected *panchayats* in all the regions except for the South has a lesser of a role than the government officials. In the New States, while, in 89 percent of the situations concerning health issues, government officials are responsible for decisions, the corresponding statistic for the elected *panchayats* is 11 percent. In contrast, in the South, 61 percent of the situations regarding health care are dealt with the elected *panchayats*.

Multivariate Results⁶

The following main findings emerge from the analysis of the regression using access to health care as the dependent variable. Every one year of schooling increases the likelihood of seeking health care by 5 percent. Household income levels is positively related to access to health care. People occupied in self-employed agricultural and non-agricultural activities are 10 percent less likely to seek health care as compared to those working in agricultural and non-agricultural labor activities. Men relative to women are 24 percent less likely to access health care. Scheduled caste, Muslims and people belonging to other religions are more likely to access health care relative to people in the ‘upper caste’ category. Among all the regions, people living

⁶ Appendix Table 2 provides the percentage distribution, means and the standard deviation of the dependent and the independent variables used in the estimation of the three dependent variables.

in the states belonging to 'New States' are 23 percent more likely to access health care than those living in BIMARU states. The people living in the rest of the regions are less likely to seek health care services as compared to those residing in BIMARU states. As expected, the distance to the primary health centre is negatively related to health care access.

Table 10 about here

The role of *panchayat* appears to be positive. Approaching the village elite relative to approaching the village *pradhan* (head of the village *panchayat*) to get the problem regarding the provision of health facilities resolves decreases the likelihood of accessing health care by 15 percent. In a similar vein, not having the confidence of being able to seek help from the *panchayat* in case of dealing with the issue of provision of health facilities reduces the chance of seeking health care by 11 percent.

With respect to the estimates from the regression analysis using logarithm of work days lost as a dependent variable, the central findings are as follows. Men experience greater loss of work days because of illness as compared to women. While when compared to married people, unmarried people lose fewer number of work days due to illness, the opposite is true of people who are widowed or separated. Scheduled caste people lose more number of days owing to illness, Muslims lose fewer number of days as compared to people affiliated to 'upper caste'. Residing in the New States and in the states of the West is negatively associated with the number of days lost when compared to residing in BIMARU states. In contrast, people who fell ill and live in the states of East and South are more likely to lose working days. Similarly, similar to the estimates pertaining to health care access, the distance to the nearest health centre is negatively

related to the number of work days lost because of illness. In a situation of no action taken by *panchayat* in response to the problem pertaining to provision of health facilities is positively related to the logarithm of work days lost due to illness. In other words, when the *panchayat* takes an action to resolve the issue of the provision of health care facilities, there is a reduction in the number of days of work that people lose due to falling ill.

Table 11 about here

The coefficients pertaining to the regression with the third dependent variable, treatment cost as a proportion of household income indicate the following. People living in households whose heads are occupied in self-employed agricultural and non-agricultural activities and in salaried jobs spend a lower proportion of household income in treatment relative to those residing in households whose heads are engaged in agricultural and non-agricultural wage activities. Those living in all the states except for those living in the South (statistically) significantly spend a lower proportion of their household income on treatment than those living in the BIMARU states. The treatment sought at public hospital and private hospital/nursing home are statistically significantly positively associated with the proportion of household income spent on health. The estimate for private hospital/nursing home as compared to public clinic is much higher than that for public hospital relative to public clinic. Similar to the case with the estimate for the logarithm of work days lost due to illness, it is seen that no action taken by the *panchayat* to resolve the problem of health care provision is associated with higher expenditure on treatment as a proportion of household income.

Discussion

The present analysis employs the most suitable and recent data to understand the status of decentralized governance in rural India in relation to the health sector perceptions, behavior, outcomes and perception. The results, both in descriptive and multivariate framework, indicate that access to health care is greater in regions of the North and BIMARU states which are socioeconomically backward. The evidence indicates that the reason for greater health care access in poorer region is owing to greater incidence of illness and not owing to greater precautionary care of ensuring physical well being. Further, overall, incidents of seeking treatment at private health care facilities in case of serious illnesses exceed that of going to public hospitals. This finding corroborates with that emerging from the analysis conducted by Binswanger-Mkhzie, Nagarajan and Pradhan (2012). The regional differences are however noteworthy. The residents of the states of the South in contrast to their counterparts in the regions of the North and BIMARU states visit public health care facilities in 70 percent of the cases. Also, this regional difference may help explain better quality of service experienced by patients living in the North and BIMARU, given that it is well documented in the literature that private health facilities provide better quality services.

The percentage of villagers who identify provision of health care facilities as a major concern is substantial. It is however statistically significantly less than those who report the availability of drinking water and sanitation as problems. This pattern of response may more be a reflection of paying greater attention to issues that affect the day to day survival as opposed to the experience of being in less frequent situations such as those posed by falling ill. In the South,

though the percentage of people feeling provision of health facilities as a serious issue is considerably higher and closer to the percentage thinking of lack of drinking water and sanitation as constraints. This ranking in priority is consistent with the extent of willingness to contribute in the resolution of the problems of drinking water, sanitation and provision of health care services respectively.

The results portray an inverse relationship between the perception of the *panchayat's* performance and the expectation. Although residents of the states in the region of the South as compared to the other regions report the highest incident of *panchayat* taking action in the situation of faced with the problems of health care issues, the extent of dissatisfaction and lack of confidence associated with the *panchayats* is also high among the respondents living in the South. This may because the extent of responsibility and the accountability towards fulfilling that responsibility is greater in the region of the South. There is a notably higher percentage of people living in the South who are of the opinion that *panchayats* are responsible for improving the provision of health care facilities. It may be however noted that the performance of the *panchayats* across the board with minor differentials among the regions, is perceived to better when confronted with specific problems such as providing assistance to pregnant women as compared to faced with the more general issue regarding the provision of health care facilities.

Additionally, the descriptive as well as to a large extent the multivariate analysis do not, unlike the case with the region wise distribution, document noteworthy differences by economic class, educational categories and occupational categories. While the odds of seeking health care increase with the years of schooling, there is no significant relationship between years of

schooling and number of work days lost owing to illness and proportion of household income spent in treatment cost. It may be noted that in case of the latter, the source of seeking treatment is significant and shows an expected pattern. The health care treatment sought in private facilities is associated with a higher proportion of household income spent on illness. With respect to the role of the *panchayat*, there appears to be no definite pattern in case of all the three outcomes.

With respect to participation, there has been an increase in the frequency of *gram sabha* meetings at the level of the village where health issues are discussed in all the regions. The regions of the South and the West appear to encourage more discussion on issues regarding to health. It may however be noted that while the *panchayati raj* system appears to have made a dent in increasing awareness of participation in health services, the traditional government continues to play a significant role in people's lives. It is plausible that the notable presence of the government is more due to the bureaucratic nexus between the traditional state and central government agencies and the *panchayats* than the explicit role played by the former vis-a vis the *panchayats*.

In sum, the findings of the present exploration indicate significant regional differences with the more socioeconomically more progressive regions of the South and for some indicators, the West showing greater participation and performance of the *panchayats* as well as better outcomes. However, greater participation is also associated with greater sense of dissatisfaction. The paradox is that greater awareness is associated with lower approval rate of the functioning of *panchayats*. In the North, the situation seems to be more in line with 'ignorance is bliss' kind of approach. Following the health outcomes it appears that it is better to be in the former than the

latter situation. The estimates on the role of the *panchayat* for the all the three dependent variables show a positive association with the presence and the action taken by the *panchayat* relative to the situations when no action or more traditional entities like the village elites were approached. These results resonate with those obtained by Binswanger-Mkhzie, Nagarajan and Pradhan (2012) employing the same data. The findings can therefore comprise a baseline for further exploring the relationship between the decentralized institutional set-up and the alleviation of poverty and inequality among vulnerable population groups. It would, in particular, be worthwhile to evaluate and compare the contribution of *panchayats*, in the provision of additional important ‘high spillover’ (benefits accrue to a broad population base) and ‘low spillover’ (benefits accrue to targeted individuals) public goods.

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Table 1. Mean and Percentage Distribution of Access, Burden, Availability and Burden of Health Care Services by Region

Variable (1)	North (2)	BIMARU (3)	New States (4)	East (5)	West (6)	South (7)	Total (8)
Panel A : Access and Burden							
Accessed health care (percent)	61.87	62.01	62.62	49.84	14.81	43.42	50.17
Number of days lost	13.29(36.04)	11.6(20.78)	8.23 (8.38)	18.02(38.71)	7.04(17.69)	12.4(14.74)	11.14(20.65)
Treatment cost as a proportion of household income	0.03 (0.13)	0.04 (0.19)	0.02 (0.07)	0.02 (0.12)	0.01 (0.14)	0.01 (0.14)	0.03 (0.20)
Treatment cost as a proportion of per capita income	0.15 (0.60)	0.23 (2.57)	0.09 (0.41)	0.10 (0.27)	0.07 (0.82)	0.14 (0.90)	0.15 (1.51)
Type of institution sought treatment in case of serious illness (percent)							
Public clinic/health centre	14.49	14.57	15.50	17.00	20.28	30.13	19.18
Public hospital	11.82	10.87	5.90	18.75	15.21	38.40	18.14
Private doctor/private clinic	62.23	65.45	75.70	44.85	40.04	18.70	49.75
Private hospital/nursing home	8.55	6.08	1.50	1.76	14.86	9.99	7.88
Others	2.91	3.02	1.40	17.64	9.61	2.78	5.05
Panel B: Availability (mean distance in kms)							
Sub-centre	5.00 (2.88)	3.97(2.96)	9.43(11.59)	2.17(0.94)	6.43(4.17)	5.98(7.52)	5.29(5.68)
Subsidiary sub-centre	10.95 (8.61)	11.87 (11.57)	16.83 (13.52)	9.88 (6.75)	8.11 (4.68)	8.45 (8.28)	10.41 (9.58)
Primary Health Centre	8.94 (7.96)	7.47 (6.38)	14.50 (8.76)	5.43 (2.91)	9.10 (7.28)	7.22 (6.70)	7.99 (6.86)
Hospital	39.04 (32.29)	39.36 (26.22)	43.85 (27.59)	13.78 (8.48)	16.27 (15.45)	10.89 (7.87)	25.87 (24.62)
Medicines	8.47 (7.54)	8.83 (12.27)	12.80 (12.83)	4.00 (3.13)	6.56 (4.32)	4.29 (3.14)	7.34 (9.00)
Panel C : Quality of service (percentage)							
Doctor was always available	76.71	70.22	76.92	54.84	67.57	43.19	63.64
No waiting time to see the health official	54.45	39.92	58.14	25.94	19.52	22.96	34.72
Panel D : Knowledge and perception (percentage)							
Know where to complain (Response - Yes)	25.60	14.24	18.43	9.69	7.09	24.44	16.68
Possible place where complaint can be made							
Senior doctor	34.57	57.53	34.83	39.53	9.09	54.09	46.74
Management of hospital/clinic	13.69	16.29	12.36	41.86	79.72	34.24	26.46
Panchayat	6.50	8.06	0.00	6.98	0.00	7.00	6.30

Note: The figures in brackets indicate standard deviation.

Table 2. Perception of the Existence of the Problem, Responsibility of the *Panchayat* and of the Expectation of the Support by *Panchayat* in the Resolution by Region, Economic Status, Educational Status and Occupation (in percentage)

Variable	Problem exists in the neighborhood			Agency responsible for dealing with the problem pertaining to provision of health facilities		Can a group of people dealing with the issue of health people get help?
	Drinking water	Sanitation and sewage	Provision of health facilities	Gram <i>panchayat</i>	Higher level <i>panchayat</i>	Response - No
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regions						
North	82.96	91.93	59.88	4.89	14.54	42.27
BIMARU	85.17	89.25	65.08	11.34	24.98	37.16
New states	89.13	88.06	65.17	7.02	21.91	36.53
East	76.87	77.00	75.76	16.51	34.86	31.34
West	92.55	95.28	93.31	9.94	22.36	35.61
South	87.83	83.05	72.86	31.44	32.43	23.28
	85.49	87.37	68.63	15.15	26.17	34.82
Economic status						
Bottom	86.27	87.42	72.53	16.50	29.66	36.31
Third	86.58	88.79	69.63	14.26	25.35	34.85
Second	86.01	86.21	67.38	15.45	25.92	34.16
Top	83.03	86.96	65.15	14.41	23.64	34.12
Educational status						
Illiterate	87.18	89.01	69.83	13.01	26.36	37.15
Primary	85.00	87.05	70.93	15.75	26.50	33.82
Secondary	84.34	84.92	64.74	15.35	25.69	33.53
Higher secondary	84.94	88.69	67.15	22.33	24.52	32.34
Some college	82.42	84.34	66.00	15.96	29.69	31.82
Primary occupation						
Self-employed in agriculture non-agricultural activities	84.40	87.81	68.73	16.47	27.07	33.54
Agricultural and non -agricultural wage labor	87.75	86.45	72.13	16.67	26.11	34.66
Others	85.25	87.35	67.77	14.45	25.91	35.20

Table 3. Performance and the Level of Satisfaction with the Performance of the *Panchayat* in Dealing with Health Related Issues
by Region, Economic Status, Educational Status and Occupation (in percentage)

Variable	Problem with the provision of health facilities		Problem of health centre not functioning properly		Pregnant women needing assistance	
	Action taken by the <i>panchayat</i>	Results of the action not satisfactory	Approached the <i>panchayat</i>	Problem not resolved	Approached the <i>panchayat</i>	Problem not resolved
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regions						
North	4.11	28.53	28.31	38.83	25.55	26.35
BIMARU	5.88	25.89	31.76	41.65	28.06	46.29
New states	6.94	18.73	28.48	55.76	38.58	35.20
East	22.82	48.04	42.56	16.97	47.52	4.74
West	5.30	36.02	34.35	9.04	24.71	19.07
South	17.64	20.21	40.00	8.83	39.38	5.06
	10.17	29.22	35.78	25.24	33.88	26.00
Economic status						
First quartile	12.14	30.19	34.58	22.11	36.18	24.22
Second quartile	9.94	30.70	37.64	27.42	35.95	26.95
Third quartile	11.05	26.04	35.73	24.56	29.84	29.21
Top quartile	7.54	29.83	35.17	27.22	33.95	23.50
Educational status						
Illiterate	9.10	28.79	32.07	30.26	30.41	34.97
Primary	11.60	32.81	41.00	19.47	38.88	18.05
Secondary	9.46	26.35	38.07	23.82	33.25	22.20
Higher secondary	12.30	25.56	35.92	25.00	41.82	17.59
Some college	10.77	30.72	29.64	21.79	29.96	23.42
Primary occupation						
Self-employed in agriculture non-agricultural activities	10.48	29.21	38.79	22.63	37.27	22.66
Agricultural and non -agricultural wage labor	11.91	28.23	37.56	25.38	38.32	25.46
Others	9.70	29.29	32.90	27.10	29.61	28.44

Table 4. Perception Regarding the Change in the Situation of the Provision of Health Facilities in the Current *Panchayat* Period as Compared to the Previous *Panchayat* Period
by Region, Economic Status, Educational Status and Occupation (in percentage)

Variable	Much worse	Somewhat worse	About the same	Somewhat better	Much better	Not aware	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Region							
North	0.76	5.00	67.30	19.15	6.45	1.34	100
BIMARU	1.14	8.57	62.20	21.65	3.34	3.10	100
New states	0.47	12.34	54.90	19.21	4.99	8.10	100
East	10.07	26.96	38.97	16.07	6.28	1.66	100
West	1.76	6.66	43.15	35.66	10.10	2.67	100
South	2.27	12.68	29.95	44.88	9.85	0.37	100
All	2.41	11.11	48.72	28.82	6.75	2.19	100
Economic status							
First quartile	3.58	13.42	44.57	29.93	6.50	2.00	100
Second quartile	2.41	10.11	50.31	28.58	6.57	2.03	100
Third quartile	2.02	10.02	48.79	6.57	6.91	2.54	100
Top quartile	1.58	10.85	51.27	2.03	7.05	2.21	100
Educational status							
Illiterate	2.50	11.50	51.19	26.27	5.88	2.65	100
Primary	2.79	12.32	44.74	31.28	7.22	1.65	100
Secondary	1.75	9.07	49.93	29.87	7.28	2.10	100
Higher secondary	2.29	11.08	46.73	30.94	7.44	1.52	100
Some college	3.01	12.21	43.29	31.13	8.22	2.14	100
Primary occupation							
Self-employed in agriculture/non-agricultural activities	2.09	10.70	48.18	30.22	7.54	1.26	100
Agricultural and non -agricultural wage labor	2.87	11.14	48.39	30.35	5.82	1.43	100
Others	2.39	11.35	49.33	27.12	6.65	3.16	100

Table 5. Ranking of Preference and Interest in Out-of-Pocket Contribution for Improving the Provision of Public Goods (in percentage)

Public Goods	Advised percentage allocation by <i>panchayat</i>				Consider out-of pocket contribution of Rs. 100 - Yes	Ranking of the interest in private contribution		
	< =10	>10 & <=20	>20 & <=50	>50		Most interested	Least interested	Not at all
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Drinking water	12.63	20.62	52.92	13.93	74.17	52.70	30.39	16.90
Sanitation and sewage	18.85	24.37	45.85	10.93	55.87	31.42	42.90	25.68
Roads & transportation	20.77	29.66	42.68	6.89	57.06	25.81	49.33	24.86
Irrigation canal, ponds, wells	18.19	24.25	44.51	13.05	31.60	37.84	36.94	25.21
Electrification	33.65	35.51	28.15	2.69	35.52	19.22	49.08	31.68
Street lighting	31.16	34.40	32.44	2.00	44.55	13.13	48.72	38.15
Credit and input subsidies	30.95	25.69	34.36	9.01	16.22	21.32	37.70	40.98
Communication	45.22	34.92	18.84	1.02	20.20	9.75	37.55	52.70
School and education	24.31	35.55	36.22	3.92	51.68	22.78	43.57	33.65
Health facilities	21.01	32.19	40.17	6.63	60.67	29.09	42.46	28.44
Natural resource management	49.96	26.44	21.31	2.28	15.24	10.86	41.26	47.88
Access to government schemes		24.86	26.63	7.02	25.36	15.35	42.42	42.22
Employment schemes for food and work	34.37	24.73	37.24	3.66	20.47	21.23	30.21	48.56
Social issues and ceremonies	59.23	21.69	18.01	1.07	24.87	7.31	30.61	62.08

Table 6. Most Important Sources of Information Regarding Major Illnesses (in percentage)

Sources of Information	Pulse polio	HIV	Bird flu
(1)	(2)	(3)	(4)
Vernacular newspaper	7.25	10.25	11.55
Local television	10.60	13.40	14.73
National television	10.12	15.18	11.10
Village <i>pradhan</i>	0.80	0.64	1.09
Health worker	44.98	26.94	22.88

Table 7. Mean Number of and the Significance Accorded to Health Issues (in percentage)
in *Panchayat* and *Gram Sabha* Meetings, 1996-2006

Variable and Year	Average number of meetings per annum		Health discussed as an issue in the <i>gram sabha</i> meetings			
	<i>Panchayat</i>	<i>Gram sabha</i>	Never	Rarely	Frequently	Always
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A:Year 1996						
North	13.28 (6.71)	1.92 (0.64)	24.00	48.00	12.00	16.00
BIMARU	12.18 (8.79)	3.79 (10.76)	51.47	32.35	13.24	2.94
New states	11.44 (1.13)	8.44 (15.61)	44.44	33.33	0.00	22.22
East	10.13 (3.90)	2.30 (1.11)	47.83	26.09	13.04	13.04
West	12.05 (1.78)	3.68 (1.45)	8.11	35.14	27.03	29.73
South	10.17 (7.20)	2.57 (1.46)	25.53	29.79	31.91	12.77
All	11.50 (6.72)	3.31 (7.03)	33.97	33.49	19.14	13.40
Panel B:Year 2001						
North	14.68 (6.81)	2.32 (0.85)	20.00	32.00	20.00	28.00
BIMARU	12.64 (9.01)	2.51 (1.02)	42.47	28.77	19.18	9.59
New states	11.22 (1.20)	3.00 (0.87)	11.11	55.56	0.00	33.33
East	10.04 (4.03)	2.57 (1.27)	34.78	30.43	13.04	21.74
West	11.78 (1.11)	3.95 (1.43)	8.11	43.24	27.03	21.62
South	11.86 (6.84)	2.92 (1.36)	18.75	35.94	35.94	9.38
All	12.19 (6.80)	3.31 (7.03)	25.97	34.63	23.81	15.58
Panel C:Year 2006						
North	12.56 (6.20)	1.72 (0.61)	24.00	44.00	4.00	28.00
BIMARU	10.95 (9.96)	2.22 (0.90)	35.62	39.73	13.70	10.96
New states	7.33 (1.66)	2.33 (0.5)	0.00	44.44	33.33	22.22
East	6.57 (2.13)	1.81 (0.68)	42.86	14.29	28.57	14.29
West	8.49 (2.72)	3.16 (1.74)	24.32	27.03	21.62	27.03
South	6.78 (4.65)	2.53 (2.16)	11.29	37.10	41.94	9.68
All	11.50 (6.72)	2.37 (1.50)	25.11	35.24	23.79	15.86

Table 8. Ranking of the Importance of Health Issues and the Agency/Institution Making the Decisions Regarding Health Matters (in percentage)

Ranking and Agency/Institution (1)	Current <i>panchayat</i> (2)	Previous <i>panchayat</i> (3)	Previous to previous <i>panchayat</i> (4)
Rank importance			
Least important	7.33	10.78	17.67
Important		41.81	32.76
Most important	33.62	28.45	31.03
Extremely important	13.79	18.97	18.53
Makes decisions			
Traditional <i>panchayat</i>	0.43	0.43	1.72
Elected <i>panchayat</i>	32.76		34.91
Village headman	0.43	0.43	3.88
Wealthy individual	1.29	2.59	3.02
Government official	46.12	46.55	38.79
<i>Panchayat</i> union	4.74	5.60	6.03
<i>Gram sabha</i>	14.22	13.36	11.64

Table 9. Ranking of the Importance of Health and the Agency/Institution Making the Decision Regarding Health Matters by States in the Current *Panchayat* Period by Region (in percentage)

Ranking and Agency/Institution (1)	North (2)	BIMARU (3)	New States (4)	East (5)	West (6)	South (7)
Ranking						
Least important	0.00	8.22	0.00	17.39	5.56	7.58
Important	44.00	57.53	33.33	34.78	38.89	40.91
Most important	44.00	23.29	44.44	21.74	50.00	34.85
Extremely important	12.00	10.96	22.22	26.09	5.56	16.67
Makes decisions						
Traditional <i>panchayat</i>	0.00	0.00	0.00	0.00	2.78	0.00
Elected <i>panchayat</i>	4.00	20.55	11.11	26.09	36.11	60.61
Village headman	0.00	0.00	0.00	0.00	2.78	0.00
Wealthy individual	0.00	2.74	0.00	0.00	0.00	1.52
Government official	76.00	47.95	88.89	47.83	41.67	28.79
<i>Panchayat</i> union	4.00	5.48	0.00	4.35	0.00	7.58
<i>Gram sabha</i>	16.00	23.29	0.00	21.74	16.67	1.52

Table 10. Odds Ratio (Robust Standard Error) Predicting Seeking Health Care Access

Variable	Odds ratio
(1)	(2)
Individual Level	
Years of schooling	1.05 ** (0.01)
<i>Occupation</i>	
Self-employed in agricultural and non-agricultural activities	0.90 * (0.05)
Other	0.91 + (0.05)
Sex (Male =1)	0.76 ** (0.03)
<i>Marital status</i>	
Unmarried	1.96 ** (0.07)
Widowed/divorced/single	0.52 ** (0.04)
Household level	
Log of household income	1.18 ** (0.02)
<i>Caste/Religious Affiliation</i>	
Scheduled caste	1.15 * (0.06)
Scheduled tribe	1.01 (0.06)
Other backward caste	1.02 (0.04)
Muslim	1.42 ** (0.09)
Other religions	1.40 ** (0.12)
Community level	
<i>States/Region</i>	
North	0.82 ** (0.05)
New states	1.23 ** (0.08)
East	0.72 ** (0.04)
West	0.08 ** (0.01)
South	0.47 ** (0.02)
Distance to the nearest Primary Health Centre (PHC)	0.98 ** (0.01)
<i>Panchayat's action and trust in panchayat relating to the provision of health facilities</i>	
Approached the village elite	0.85 ** (0.05)
No confidence in seeking help from the panchayat	0.89 ** (0.03)
Constant	0.19 ** (0.03)
Number of Observations (Degrees of Freedom)	20161 (26)
Log pseudolikelihood	-12654.40

** p<=0.001; *p <=0.05; +p<= 0.01

Note : Controlled for square of years of schooling; square of the distance to Primary Health Centre (PHC).

Reference categories: Agricultural and non-agricultural laborers; Female; Married; Upper caste; BIMARU states;

Approached the village *pradhan*; Have confidence in seeking help from the *panchayat*.

Table 11. Select OLS Coefficients (Robust Standard Error) of Logarithm of Work Days Lost Due to Illness and Treatment Cost as Proportion of Household Income
(Universe includes individuals who reported to have fallen ill in the year 2006)

Variables	Logarithm of number of work days lost due to illness	Treatment cost as a proportion of household income
(1)	(2)	(3)
Individual Level		
Years of schooling	0.01 (0.05)	0.003 (0.002)
<i>Occupation</i>		
Self-employed in agricultural and non-agricultural activities	0.0004 (0.02)	0.002 (0.01)
Other	0.04 + (0.02)	0.01 (0.01)
Sex (Male =1)	0.06 ** (0.02)	0.01 ** (0.01)
<i>Marital status</i>		
Unmarried	-0.14 ** (0.02)	-0.01 (0.01)
Widowed/divorced/single	0.21 ** (0.03)	0.05 (0.01)
Household level		
Logarithm of household income	-0.01 (0.01)	
<i>Occupation of the household head</i>		
Self-employed agricultural workers	n.a	-0.01 ** (0.004)
Self-employed non-farm non-agricultural workers	n.a	-0.01 (0.01)
Salary	n.a	-0.02 ** (0.01)
Others	n.a	0.0004 (0.01)
<i>Caste/Religious Affiliation</i>		
Scheduled caste	0.07 ** (0.03)	0.003 (0.01)
Scheduled tribe	0.001 (0.02)	-0.002 (0.01)
Other backward caste	0.01 (0.02)	0.01 (0.01)
Muslim	-0.13 ** (0.04)	-0.002 (0.01)
Other religions	-0.02 (0.05)	-0.01 (0.01)
Community level		
<i>States/Region</i>		
North	-0.07 (0.06)	-0.02 ** (0.01)
New states	-0.14 ** (0.05)	-0.01 ** (0.01)
East	0.37 ** (0.04)	-0.01 ** (0.01)
West	-0.31 ** (0.03)	-0.02 * (0.01)
South	0.41 ** (0.03)	-0.004 (0.01)
Logarithm of the distance of the nearest health facility (above the level of the sub-centre)	0.03 ** (0.01)	0.002 (0.003)
<i>Type of institution sought treatment at in case of serious illness</i>		
Public hospital	n.a	0.01 (0.01) *
Private doctor/ private clinic	n.a	-0.0003 (0.01)
Private hospital/nursing home	n.a	0.12 ** (0.02)
Others	n.a	-0.003 (0.01)
<i>Panchayat's action in panchayat relating to the provision of health facilities</i>		
No action taken	0.05 ** (0.02)	0.02 ** (0.01)
Constant	1.97 ** (0.10)	0.01 (0.01)
Observations (Degrees of freedom)	10,855 (21)	8,824 (28)
R-squared	0.18	0.03

** p<0.001; *p<0.05; +p<0.01 n.a = not applicable/excluded

Note: + Controlled for square of years of schooling.

Reference categories: Agricultural and non-agricultural laborers; Female; Married; Agricultural and non-agricultural labor as household's head occupation; Upper caste; BIMARU states; Public clinic/health centre; Action taken by the panchayat.

Appendix Table 1. Description of the Dependent and the Independent Variables Employed in the Multivariate Analyses

Variables (1)	Description (2)
Dependent variables	
Health care access in year 2005-06	Accessed health care; Did not access health care Reference category : Did not access health care
Number of work days lost owing to illness in year 2005-06	Logarithm of number of days lost owing to illness
Treatment cost as a proportion of household income in year 2005-06	Treatment cost as a proportion of household income
Independent variables	
<i>Individual Level</i>	
Years of schooling	
Occupation	Self-employed in agricultural and non-agricultural activities, Agricultural and non-agricultural labor, Others Reference category : Agricultural and non-agricultural labor
Sex	Male; Female Reference category : Female
Marital status	Married ; Unmarried; Widowed/divorced single Reference category : Married
<i>Household level</i>	
Household income	Logarithm of household income
Occupation of the household head	Self-employed/agricultural activities; Self employed non-farm/non-agricultural workers; Salaried; Agricultural and non-agricultural labor, Others Reference category : Agricultural and non-agricultural labor
Caste/Religious Affiliation	Scheduled caste; Scheduled tribe; Other backward caste; Upper caste; Muslims; Other religions Reference category : Upper caste
<i>Community level</i>	
States/Region	North (Haryana, Himachal Pradesh, Punjab); BIMARU (Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh) New States (Chhattisgarh, Jharkhand); East (Orissa, West Bengal); West (Gujarat, Maharashtra); South (Andhra Pradesh; Karnataka; Kerala; Tamil Nadu) Reference category : BIMARU states
Distance of the nearest primary health centre (PHC) (in kms)	Logarithm of the distance of the nearest primary health centre (PHC)
Distance of the nearest hospital (in kms)	Logarithm of the distance of the nearest hospital
Type of institution sought treatment at for serious illness	Public clinic/health centre; Public hospital; Private doctor/private clinic; Private hospital/nursing home; Others Reference category : Public clinic/health centre
Panchayat's action in <i>panchayat</i> relating to the provision of health facilities	
Approached agency/institution	<i>Pradhan</i> ; Village elite; Government official; Neighbors; Others Reference category : <i>Pradhan</i>
Confidence level in seeking help from the <i>panchayat</i>	Yes ; No Reference category : Yes
Action taken by the <i>panchayat</i>	Yes ; No Reference category : Yes

Appendix Table 2. Summary Statistics of the Dependent and the Independent Variables Employed in the Multivariate Analyses

Variable (1)	Full Sample		Sample reported falling ill in year 2005-06	
	Percentage Distribution/Mean (2)	Standard Deviation (3)	Percentage Distribution/Mean (4)	Standard Deviation (5)
Dependent Variables				
Accessed health care (No health care access)	50.17(49.83)			
Workdays Lost (logarithm of work days lost)			11.10 (2.03)	20.10 (0.79)
Treatment cost as a proportion of household income			0.03	0.21
Independent Variables				
Individual Level				
Years of schooling	4.67	4.72		
Occupation				
Self-employed in agricultural and non-agricultural activities	19.27		31.33	
Agricultural and non-agricultural laborers	13.84		24.36	
Other	66.9		44.29	
Male				
Marital status				
Married	49.65		70.46	
Unmarried	45.33		22.71	
Widowed/divorced single	5.02		6.83	
Household level				
Household income in Rs. (logarithm of household income)	76448.29(10.74)	208851.30 (0.95)	62264.65 (10.54)	153564.1(0.95)
Occupation of the household head				
Self-employed agricultural workers			49.58	
Self-employed non-farm non-agricultural workers			6.38	
Salary			5.07	
Agricultural and non-agricultural laborers			29.39	
Others			9.59	
Caste/Religious Affiliation				
Scheduled caste	14.5		13.81	
Scheduled tribe	8.01		11.22	
Other backward caste	41.99		43.84	
Upper caste	23.79		24.74	
Muslim	6.74		3.56	
Other religions	4.96		2.84	
Community level				
States/Region				
North	10.78		3.34	
BIMARU	35.72		14.57	
New states	6.57		2.64	
East	9.36		8.22	
West	12.93		28.91	
South	24.64		42.32	
Distance of the nearest primary health centre (PHC) (in kms) (logarithm of distance)	8.09(1.76)	7.10 (0.83)	8.07(1.76)	7.10(0.82)
Distance of the nearest hospital (in kms) (logarithm of distance)	27.46(2.92)	24.53(0.93)	19.29(2.61)	18.32(0.85)
Type of institution sought treatment at in case of serious illness				
Public clinic health centre	n.a		22.51	
Public hospital	n.a		24.11	
Private doctor/ private clinic	n.a		39.21	
Private hospital nursing home	n.a		9.21	
Others	n.a		4.97	
Panchayat's action and trust in panchayat relating to the provision of health facilities				
Approached the village elite	9.38			
No confidence in seeking help from the panchayat	34.82		n.a	
No action taken by the panchayat	n.a		39.54	

Figure 1. Action taken by the Panchayat when Approached with the Problem of Provision of Health Care Facilities by Region

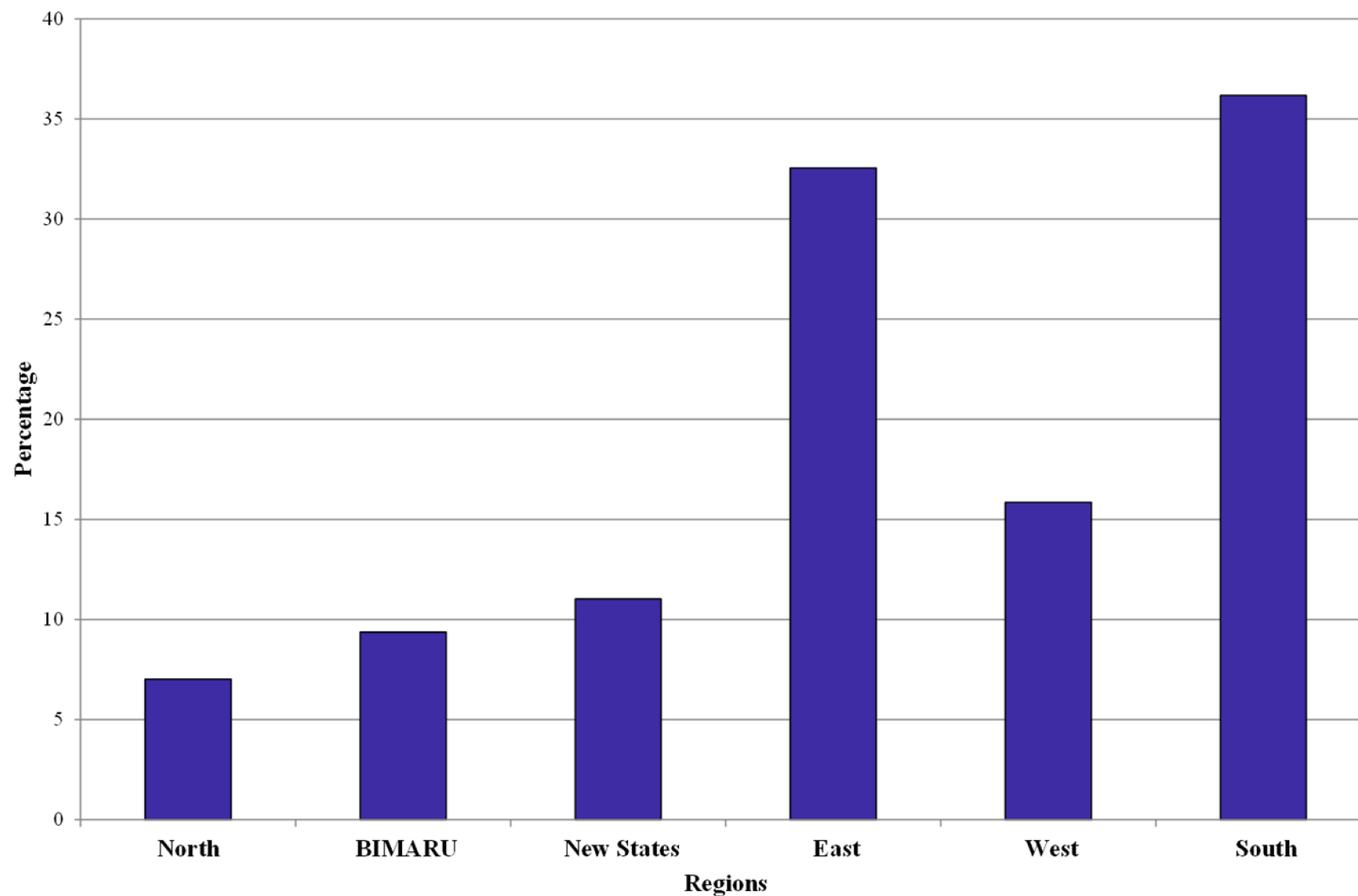


Figure 2. Ranking of the Importance Accorded to the Discussion on Health Issues in Gram Sabha Meetings by Panchayat Period

